

## REMARKS

By this amendment, claims 18-20, 24, and 26-37 are pending in the application, of which claims 18, 20, 23, 24, 26, 28, 35 and 37 are being amended. The claim amendments are fully supported by the original claims and Specification, and add no new matter. Accordingly, entry of the claim amendments is respectfully requested.

Claims 18, 20, 23, 24, 26, 28, 35 and 37 are being amended to recite: "titanium metal coating" which is supported by the Specification in at least page 7, lines 26-28, which states: "... The coating 302 also comprises a metal material that has resistance to erosion in an energized gas, such as for example, at least one of aluminum, titanium, copper and chromium."

In addition, claims 20, 24, 35 and 37 are being amended to recite that the titanium metal coating is on the structure, and not over the structure. These claim amendments are supported by the Specification at page 32, lines 32-24, which recites:

The molten particles impinge on the surface 306 of the underlying structure 304, where they cool and condense to form a conformal coating 302.

Thus the claim amendments add no new matter, and entry of the amendments is respectfully requested.

### Claim Rejections under 35 U.S.C. § 102

Claims 18-20, 23-24 and 26-37 were rejected under 35 U.S.C. § 102(a) as anticipated by Lin et al. (U.S. 2003/000185965A1).

To anticipate a claim, a cited reference must contain all of the elements and limitations of the claim in a single prior art reference. There must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention. Scripps Clinic & Research Found. V.

Genentech Inc., 18 USPQ 2d 1001, 1010 (Fed. Cir. 1991).

Claim 18 is directed to a refurbished chamber component comprising, inter alia, a titanium metal coating.

Lin et al. does not disclose a refurbished chamber component comprising a titanium metal coating. Instead, Lin et al. discloses using a titanium oxide coating which is a ceramic coating and not a metal coating as claimed. Specifically, Lin et al. teaches:

“... The textured coating 420 may be made of a material 425, such as a ceramic material, such as for example one or more of aluminum oxide, titanium oxide and boron carbide...”

(Lin et al., Paragraph [0051]).

Accordingly, Applicant respectfully submits that Lin et al. does not anticipate claim 18 because Lin et al. does not teach a refurbished component comprising a titanium metal coating as recited in claim 18.

Further, independent claims 20, 24, 35 and 37 now also recite a titanium metal coating, and these claims are also not anticipated by Lin et al. for the same reasons as claim 18, namely, Lin et al. discloses a titanium oxide coating which is a ceramic coating - not a metal coating as claimed.

Accordingly, since Lin et al. does not anticipate claims 18, 20, 24 and 37; or claims 19, 23, 27-34 and 36, which depend therefrom.

### Claim Rejections under 35 U.S.C. § 103

Claims 18-20, 23-24 and 26-37 were rejected under 35 U.S.C. § 103(a) as obvious over Lin et al. (US 2003/0026917 A1) in view of Garg (US 5,009,966).

As acknowledged by the Examiner, Lin et al. is “silent as to the base material being titanium.” Further, Lin et al. is also absent a titanium metal coating on the component. Instead, throughout the Specification Lin et al. teaches a ceramic coating, as evidenced by teachings to the same in the Abstract, Summary and the independent claims of Lin et al.. For example, the Abstract teaches: “... plasma sprayed ceramic coating ... on the roughened surface of the dielectric...”. [Emphasis Added, Abstract]. Thus Lin et al. does not teach or suggest a titanium metal coating on a titanium structure as claimed.

Garg et al. does not cure the deficiencies of Lin et al. because Garg et al. also does not teach a process chamber component comprising a titanium metal coating on a titanium structure. Instead, Garg et al. teaches coated substrates having an intervening non-reactive noble metal interlayer that lies in-between the underlying structure and the coating. Garg et al. further teaches that a non-reactive noble metal interlayer is necessary when applying coatings to a titanium structure:

“... Because of their reactivity to halogenated reagents, it is difficult to chemically vapor deposit hard protective coatings that strongly adhere to titanium or titanium alloys. This is true because the halogenated reagents and their reaction products in the CVD and CVD-like processes react with the titanium and titanium alloys, causing spalling of the deposited coating. In the case of PVD processes, stresses due to the mismatch of the coefficients of thermal expansion can lead to poor adhesion and spalling.”

[Garg et al., Column 1, lines 24-33].

“Therefore, it is desirable to deposit adherent noble material on titanium and titanium alloys prior to coating them with ceramics, hard metal and metal compounds.”

[Garg et al., Column 2, lines 15-18].

Thus Garg et al. teaches the desirability of depositing an adherent noble material as an interlayer between a coating and an underlying structure. Garg et al. even suggests that direct coating of titanium metal onto titanium substrates, without the noble metal interlayer, can cause spalling.

Consequently, one of ordinary skill in the art would not combine the teachings of Lin et al., which is to process chamber components having ceramic coatings and not metal coatings, with the teachings of Garg et al., which emphasize the importance of providing a noble metal interlayer between a coating and an underlying structure comprising titanium to prevent spalling, to derive Applicants claims to a process chamber component comprising a titanium coating on an underlying titanium structure.

For at least these reasons, claims 18-20, 23-24 and 26-37 are not obvious over Lin et al. in view of Garg et al.

### CONCLUSION

For at least these reasons, the present claims are allowable over the cited art. Should the Examiner have any questions regarding the above remarks, the Examiner is requested to telephone the undersigned at: (415) 538-1555.

Respectfully submitted,  
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By: \_\_\_\_\_

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